

What is claimed is:

1. A magnetic write head comprising:
a main pole;
a conductive coil positioned adjacent the main pole, the conductive coil being insulated from the main pole; and
means for directing a magnetic field produced by the conductive coil toward the main pole.
2. The magnetic write head of claim 1, further comprising:
a return pole, wherein at least a portion of the conductive coil is positioned between the main pole and the return pole.
3. The magnetic write head of claim 2, wherein the conductive coil has a top side, a bottom side, a first side, and a second side, and wherein the means for directing the magnetic field comprises a ferromagnetic cladding on at least the bottom side of the conductive coil adjacent the return pole.
4. The magnetic write head of claim 2, further comprising:
a ferromagnetic clad shield positioned between the main pole and the return pole.
5. The magnetic write head of claim 1, wherein the conductive coil has a top side, a bottom side, a first side, and a second side, and wherein the means for directing the magnetic field comprises a cladding covering the bottom side, the first side, and the second side of the conductive coil.
6. The magnetic write head of claim 5, wherein the cladding is a magnetically soft alloy.

7. The magnetic write head of claim 6, wherein the magnetically soft alloy is selected from the group consisting of $\text{Ni}_{80}\text{Fe}_{20}$, CoZrTa, CoZrNb, CoNiFe, FeAlN, and NiFeCu.
8. The magnetic write head of claim 5, wherein the cladding has an induced anisotropy.
9. A magnetic write head comprising:
 - a main pole;
 - a conductive coil having a top side, a bottom side, a first side, and a second side, wherein the conductive coil is positioned adjacent the main pole, the conductive coil being insulated from the main pole; and
 - a ferromagnetic cladding adjacent to at least one of the top side, bottom side, first side, and second side of the conductive coil.
10. The magnetic write head of claim 9, wherein the ferromagnetic cladding has an induced anisotropy.
11. The magnetic write head of claim 9, wherein the ferromagnetic cladding is in direct contact with the conductive coil.
12. The magnetic write head of claim 9, further comprising:
 - a return pole, wherein at least a portion of the conductive coil is positioned between the main pole and the return pole.
13. The magnetic write head of claim 12, further comprising:

a clad shield positioned between the main pole and the return pole.

14. The magnetic write head of claim 9, wherein the ferromagnetic cladding is a magnetically soft alloy.

15. The magnetic write head of claim 14, wherein the magnetically soft alloy is selected from the group consisting of $\text{Ni}_{80}\text{Fe}_{20}$, CoZrTa, CoZrNb, CoNiFe, FeAlN, and NiFeCu.

16. The magnetic write head of claim 9, wherein the ferromagnetic cladding is adjacent to at least two sides of the conductive coil.

17. The magnetic write head of claim 9, wherein the ferromagnetic cladding is adjacent to at least three sides of the conductive coil.

18. The magnetic write head of claim 9, wherein the ferromagnetic cladding is a cladding core insulated from and adjacent to the conductive coil, wherein the top side of the conductive coil is exposed to the main pole.

19. A magnetic write head comprising:
a first pole; and
a clad coil having a portion positioned adjacent the first pole, the clad coil comprising a ferromagnetic material adjacent to at least a portion of a non-magnetic electrical conductor.

20. The magnetic write head of claim 19, wherein the ferromagnetic material has an induced anisotropy.

21. The magnetic write head of claim 19, wherein the ferromagnetic material is a magnetically soft alloy.
22. The magnetic write head of claim 21, wherein the magnetically soft alloy is selected from the group consisting of $\text{Ni}_{80}\text{Fe}_{20}$, CoZrTa, CoZrNb, CoNiFe, FeAlN, and NiFeCu.
23. The magnetic write head of claim 19, wherein the non-magnetic electrical conductor has a top side, a bottom side, a first side, and a second side, and wherein the ferromagnetic material is adjacent to at least two sides of the non-magnetic electrically conductive material exposing the top side of the non-magnetic electrical conductor to the first pole.
24. The magnetic write head of claim 19, wherein the non-magnetic electrical conductor has a top side, a bottom side, a first side, and a second side, and wherein the ferromagnetic material is adjacent to the bottom side, first side, and second side of the non-magnetic electrical conductor exposing the top side of the non-magnetic electrical conductor to the first pole.
25. The magnetic write head of claim 19, wherein the non-magnetic electrical conductor has a top side, a bottom side, a first side, and a second side, and wherein the ferromagnetic material is a cladding core insulated from and adjacent to the bottom side, first side, and second side of the non-magnetic electrical conductor, wherein the top side of the non-magnetic electrical conductor is exposed to the first pole.
26. The magnetic write head of claim 19, further comprising:

a second pole spaced from the first pole, wherein at least a portion of the clad coil is positioned between the first and second poles;

the non-magnetic electrical conductor has a top side, a bottom side, a first side, and a second side; and

the clad coil has a cladding layer of the ferromagnetic material on at least the bottom side of the non-magnetic electrical conductor facing the second pole.

27. The magnetic write head of claim 26, further comprising a via, wherein the clad coil circles around the via and wherein the cladding layer is adjacent to at least one side of the non-magnetic electrical conductor at a portion of the clad coil positioned outside of the first and second poles.

28. The magnetic write head of claim 26, further comprising a via, wherein the clad coil circles around the via and wherein a clad core is adjacent to the non-magnetic electrical conductor at a portion of the clad coil positioned outside of the first and second poles.

29. The magnetic write head of claim 19, wherein the clad coil is positioned adjacent an air bearing surface.

30. The magnetic write head of claim 19, wherein the clad coil is removed from the air bearing surface.

31. The magnetic write head of claim 19, wherein the ferromagnetic material saturates when a writing current is supplied through the clad coil.

32. The magnetic write head of claim 19, wherein the ferromagnetic material does not saturate when a writing current is supplied through the clad coil.
33. The magnetic write head of claim 19, further comprising:
a bias layer positioned adjacent the ferromagnetic material.
34. The magnetic write head of claim 33, wherein the bias layer is an antiferromagnetic exchange layer.